

Inspection/meeting notes and pictures of Weyerhaeuser – Longview BART emission units.

Meeting occurred on Feb. 13, 2008 to go over comments on the BART report. The company will respond to the comments and follow-up a short time later with a revised BART report. Main plant contact was Greg Bean and the consultant was Jay Willenberg of CH2M-Hill. Marc Crooks requested to accompany me to this meeting/inspection. This was my first visit to this plant site.

Primary discussion points was level of detail in response. Jay and I were clear that the audience of the report was not just Ecology but individuals and organizations outside of Ecology that may not agree with the WeyCo proposal or the Ecology decision of what BART controls are for these units. Once this particular point was understood, the rest of the discussion went smoothly.

Most discussion had to do with the level of detail needed to respond. An early draft response to question 1, included almost all necessary information requested, and the rest of it became apparent as we progressed through the next 3 or 4 questions. Interestingly, they seem to believe that they have had construction projects for new emission controls, recovery boiler rebuilding, etc that did not result in dimensioned construction drawings being produced.

One element of discussion was the baseline emissions the used for modeling. They used criteria from Hermann Wong of Region 10 to use the 24 hr period where the highest mass of visibility impairing emissions occurred. They interpreted this to be the day with the highest total mass of SO₂ and NO₂ emissions, rather than the day with the highest NO_x and the highest SO₂. Thus, their choice of days ended up being a day with a large quantity of NO_x and a low quantity of SO₂ emissions. Their response and revised report will further elaborate on this approach. They agreed that it was not well described in the report submitted to us.

One element of discussion came up about the power boiler SO₂ controls. The Trona system was sold as part of a package by the ESP vender. The major selling point was that the use of the Trona system would not result in an increase in the SO₂ emissions resulting from the modification to the power boiler to increase its steam capacity. Also the boiler air optimization process did not reduce NO_x emissions as much as hoped or anticipated. Emissions were reduced from what they would have been, but not as much as possible. Conjecture is that there is only 1 level of overfire air on this unit. Associated with that conjecture is the need tr adequate air velocities through the grate system to prevent plugging and bridging of the grate.

Met the Plant Manager, Brian Wood, and he heard the message on the audience for the report. He along with the rest of the Weyco staff understood that the BART report would be posted on the Ecology Web site and be made publicly available for review. This also made getting the report revised a more important aspect of the project to respond to the comments on the report.

Modeling information will be sent out soon, a letter response to the comments will be sent early March, and a revised report shortly afterwards. Difference in dates between the response and the revised report is due to workload commitments of the Mr. Willenberg.

The following photos are not in any particular order.



This is a picture of the Trona storage tank from the west. Tank was said to contain storage of the Trona, and milling equipment to grind it small enough to be injected to the boiler exhaust. The injector is via a pipe about 2 in. in OD blowing the Trona into the stack. Staff couldn't confirm if just a pipe or it had multiple injection points.

Boiler is to the left and ESP and stack are to the right.



This is a picture of one of the black liquor injectors. The pipe OD is about 1.5 inches. The firebox is visible in the slot. The injectors are below the tertiary air ports and above the secondary ports.



PB#10 building. The old gravel filter is visible on the right side of the picture. The power boiler is in the tall building at center. The large tank on the left is for black liquor storage.



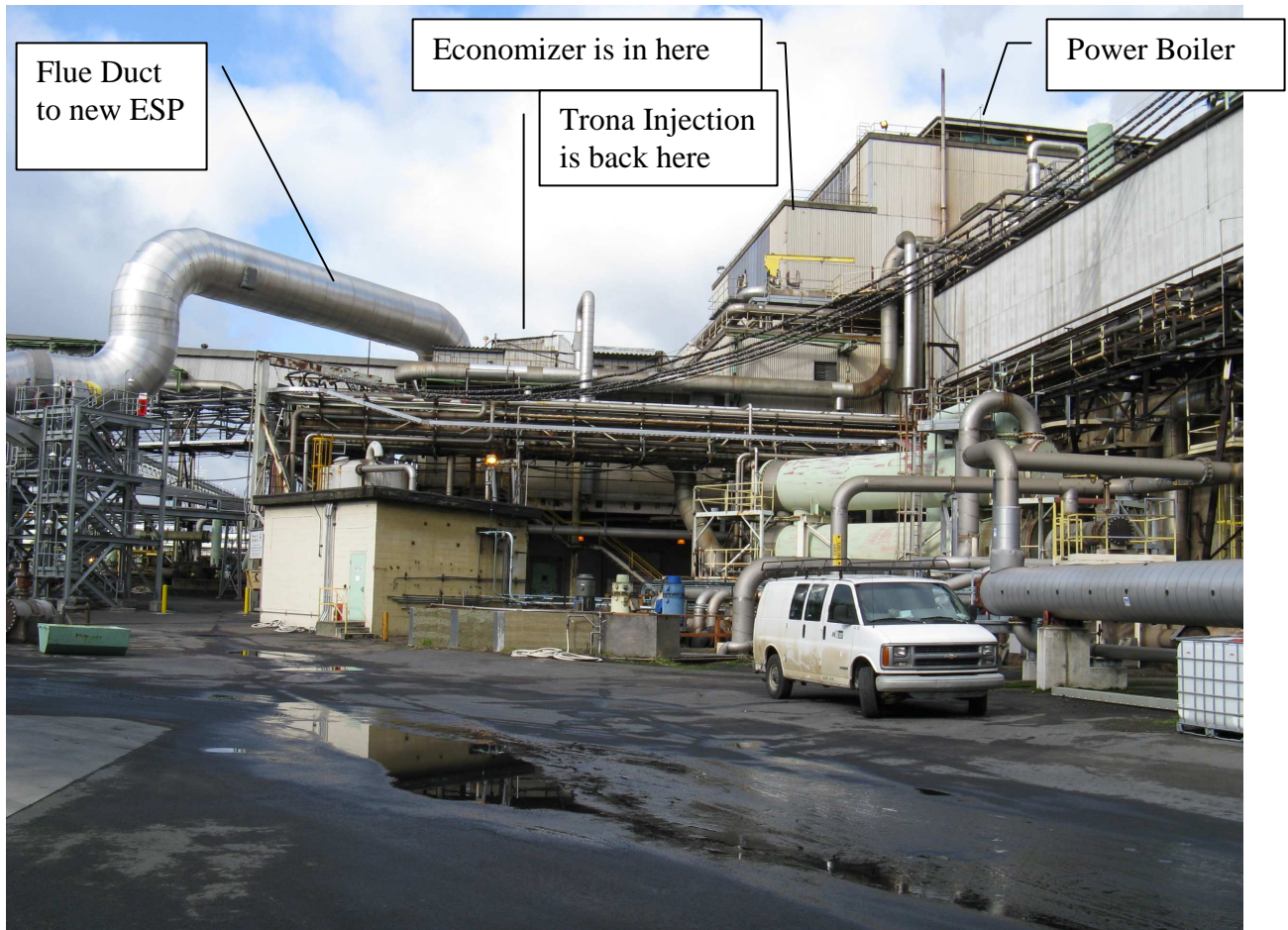
New Power boiler stack behind boiler building. Stack does not exhibit any opacity. Need to look for heat waves to see it is operating.



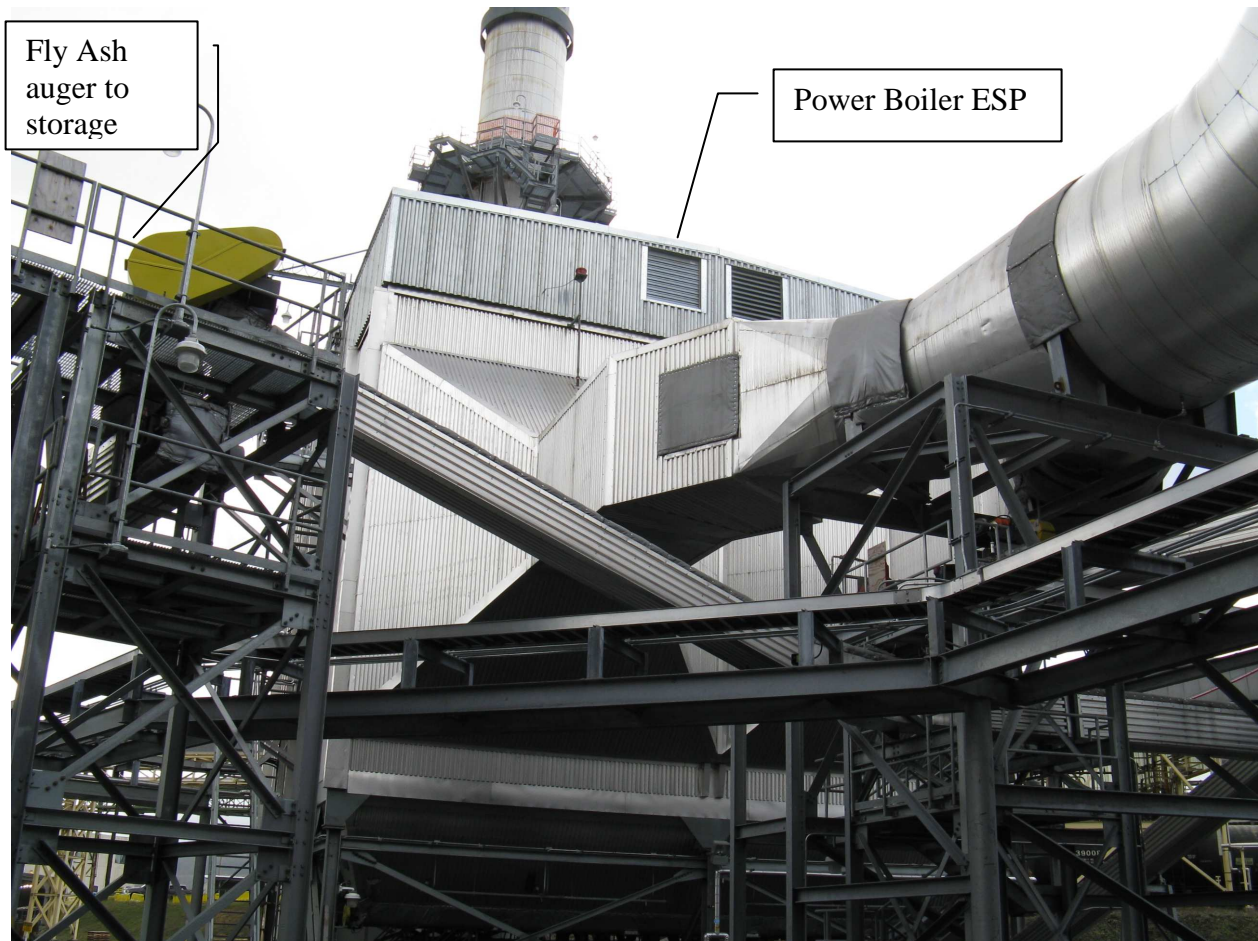
This is the fly ash silo/load out location. The fly ash is transported off site by tractor trailer. There is minimal space to maneuver the truck and trailer into the bay.



Back end of powerhouse building. Economizer is inside the lower building section in back. The big silver box on left is the new ESP and the shelters contain the emissions monitoring equipment.



Overview of back end of Power Boiler #10



The ESP and new stack along with duct from the boiler building.

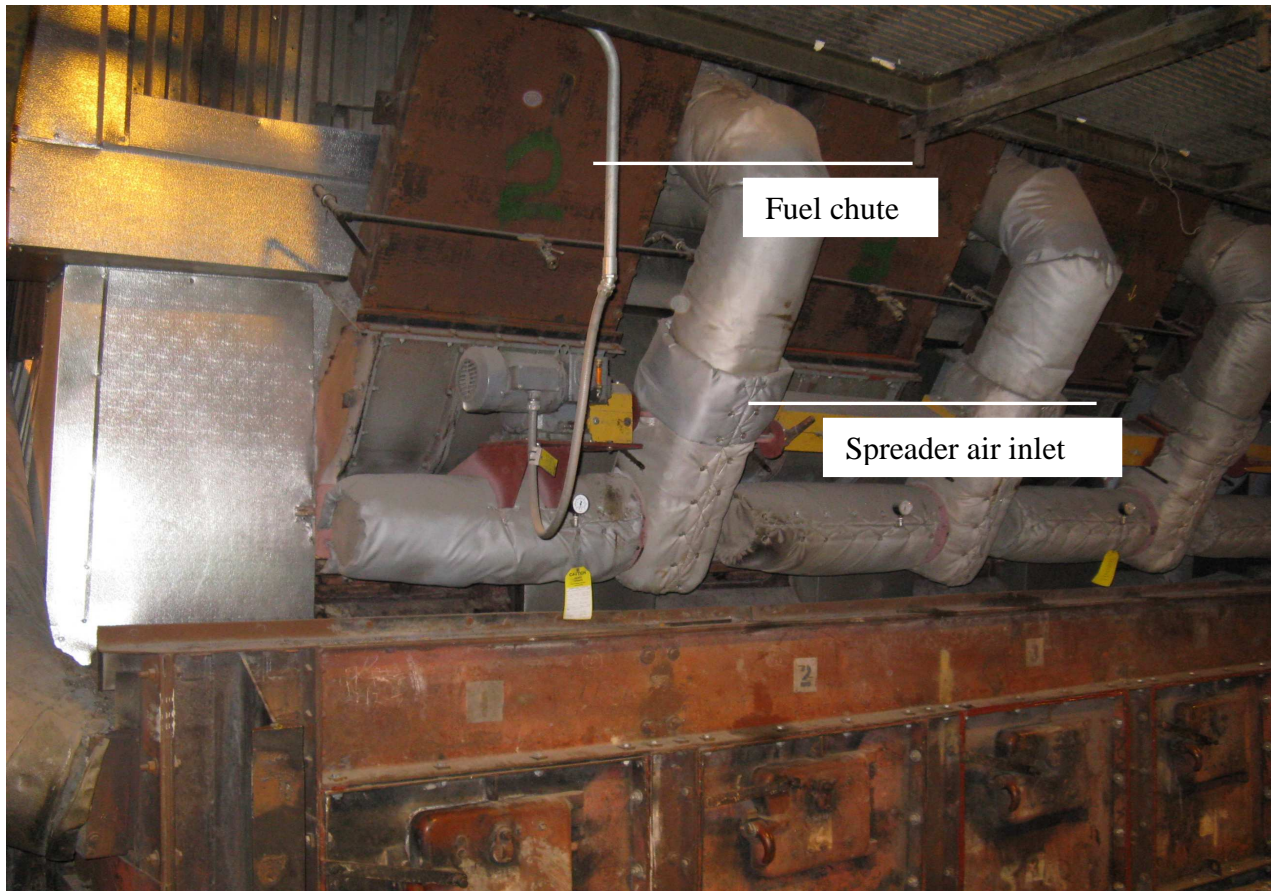


Flue duct from Power
Boiler to ESP

Ground level view of the ESP showing structural supports necessary to support the ductwork and fly ash conveyer.



The clear area in this picture was necessary to bridge major plant water and wastewater lines that run underground here.



Fuel inlet to pneumatic spreaders for power boiler. The air to drive the spreader is carried in the silver pipes. The fuel comes down the steel chutes. The fuel is caught up in the air flow and hits a steel plate in the firebox and is then spread across the fire grate. The air for the spreading system is part of the combustion air but is controlled separately from the main forced draft blower



Another picture of the fuel inlet system showing the entire wall of the boiler.



Fuel auger. The primary fuel on this day was wood with sludge and a minimum of coal.



The brown sticks are wood, black pebbles are coal, the rest is wood fiber and sludge. The coal is 'lump' coal and may range in size from 1/8" to 2" in size. Coal is purchased on the open market . the plant does not use enough to justify a unit train or, they believe, to negotiate a long-term supply contract with a supplier. The plant is not equipped to store or unload a unit train of coal.

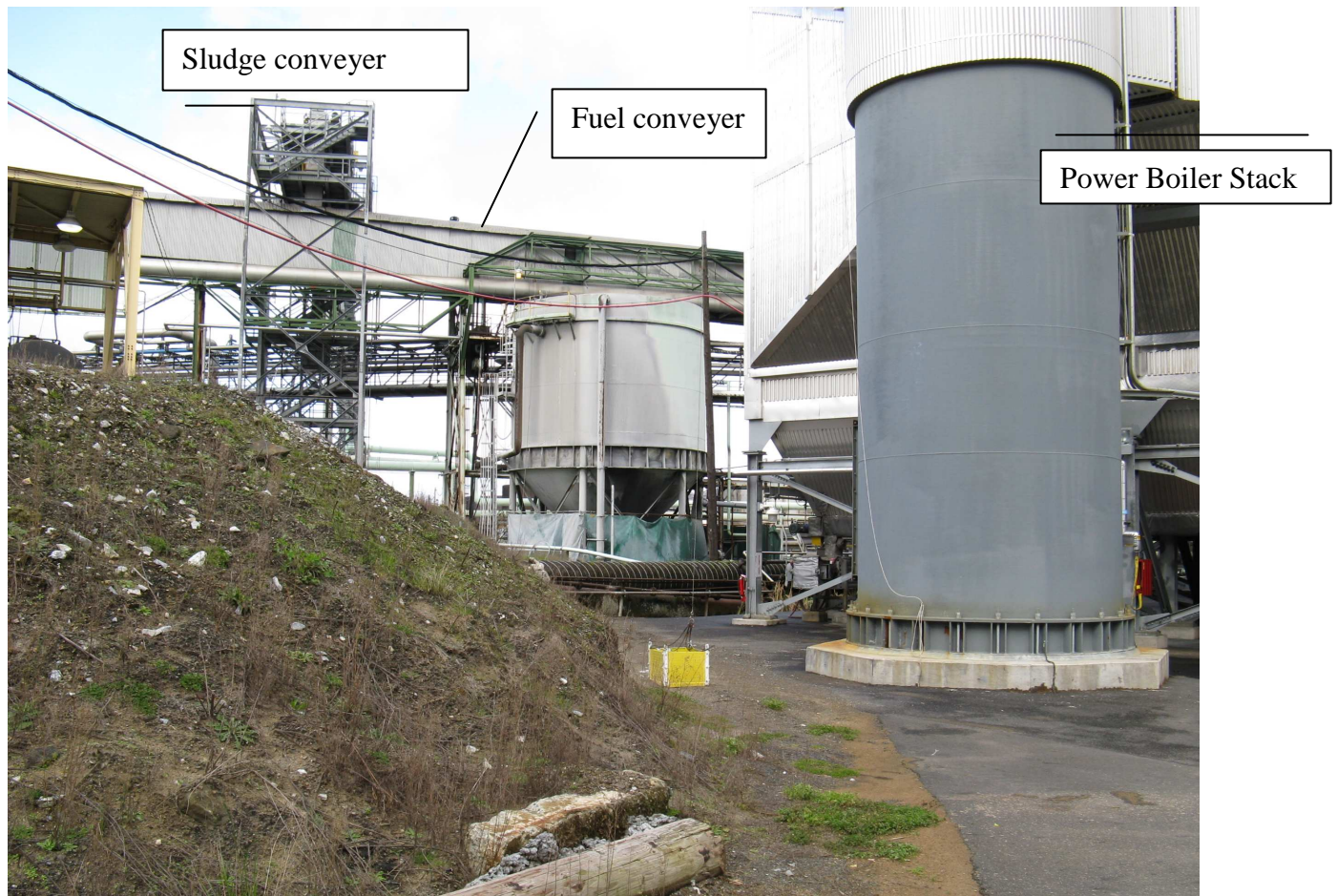
On an annual average, about half of the 1,000 MMBtu/hr heat input is comprised of coal, though on any given day, the fuel used may be primarily wood, coal or oil.



Boiler firebox showing the steel bars of the moving grate system. About 40% of the combustion air comes through the grate and is necessary to keep the grates clean and burn the char.



Another picture of the firebox showing the flame zone.



this shows the base of the #10 boiler stack at the right. In the center is an abandoned silo. The horizontal structure near the top of the picture is the fuel conveyer from the short-term fuel storage building (the cathedral, for its shape) the square framework above the fuel conveyor is where wastewater sludge is introduced to the fuel.



Power boiler secondary air inlets. These are new, inlets installed as part of air distribution optimization program.



Recovery boiler ESPs at ground level. 3 separate ESPs running in parallel. 2 on then left and 1 on the right.



Recovery boiler primary air inlets. They surround the entire furnace at this level. The devices with a yellow ball on the end are pneumatic plungers used to keep the air ports open. The primary air enters via the silver square duct below the plungers.

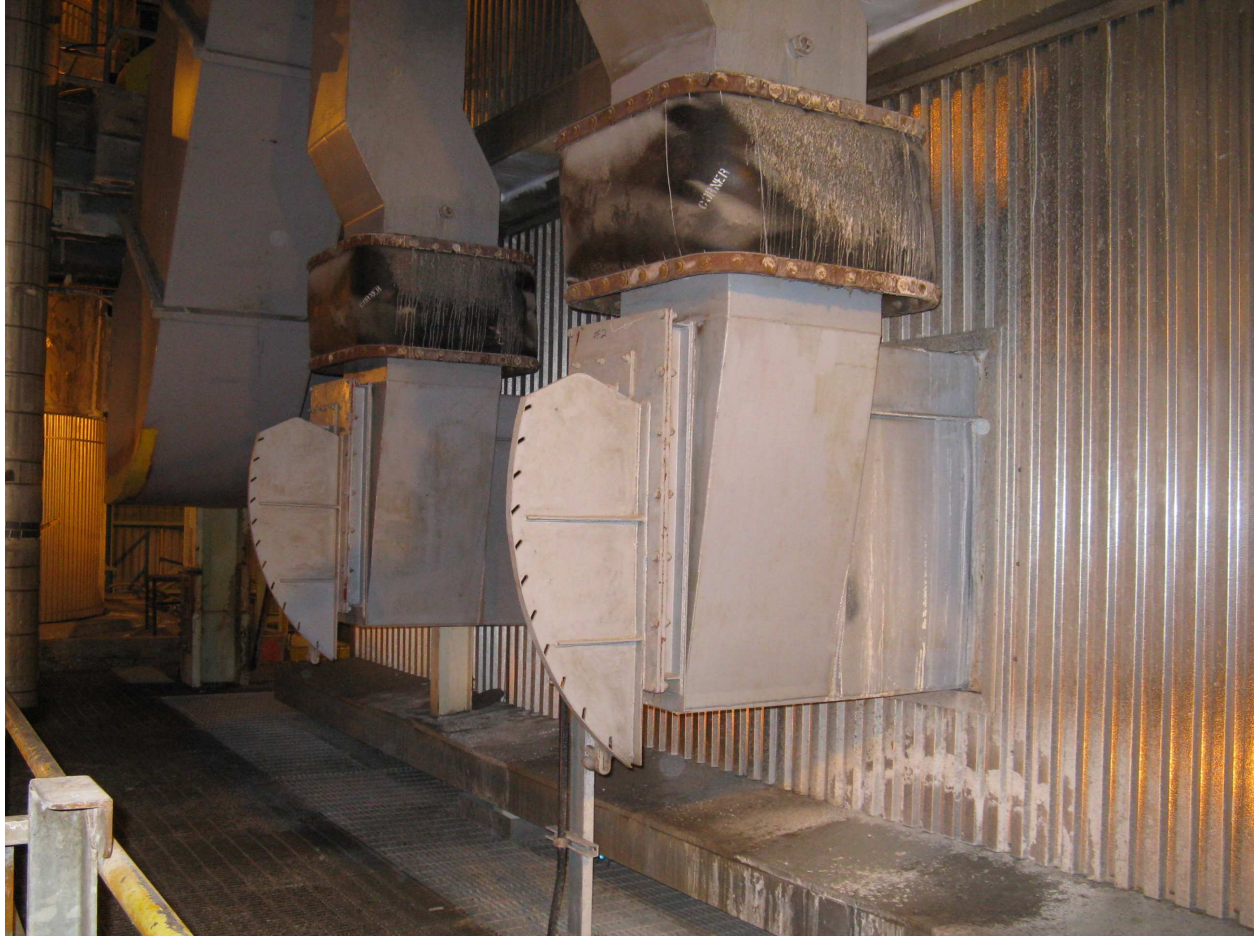


Recovery boiler building and stack. The ESP inlets are the upside down 'y' and the third rectangular duct rising up from the right. They are then ducted together on the near face of the ESPs to enter the stack. The NCG incinerator scrubber stack enters the recovery boiler flue after the ESPs and before the CEMs. the CEMs are located at the level of the catwalk even with the green support truss for the stack. The support truss and CEM/stack sampling platform are not at the same elevation.





A closer picture of how the ESPS are ducted to the stack and recovery boiler.



Recovery furnace tertiary air ports.



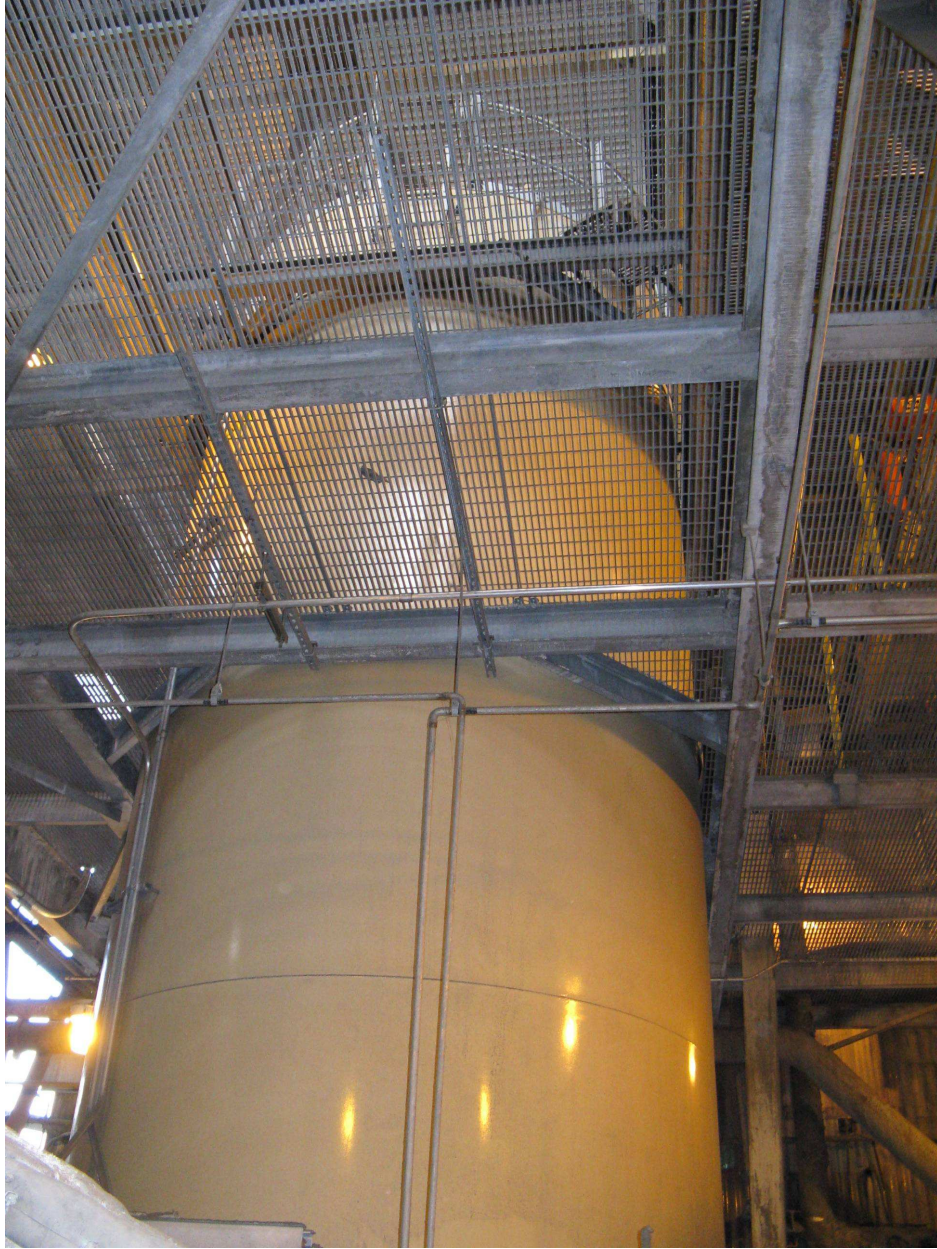
Recovery boiler secondary air ports and the residual oil burners. The Secondary air inlets are with numbered plates, the oil injectors are located between the air inlets. The rods with the yellow ball on the end are pneumatic plungers to keep the air ports clear.



Base of Power boiler stack and its ESP. the CEM and stack sampling ports are accessed via stairway from the top of the ESP rather than a stack mounted ladder as at the Recovery boiler.



Trona storage from West side of building



Trona storage looking up from ground level. The flue and injection point is on the left.



Trona storage with a covered screw conveyor in front. Picture from the west side is taken from the opening beyond the portable stairway. Abandoned structures from earlier pulp mills is visible in the background.

